Common Data Formatting

Election of chair / co-chair and recording Secretary
Joe Schafer – Chairman
Dan Olsen – Co-Chairman
Ted Vorburger – Recording Secretary

Mission Statement

Define and document the data format and content requirements for dimensional inspection results for reporting and database applications.

Issues defined during meeting

Description	Status	Owner
1. Feature measured twice during program. See #12	Resolved	Bob Wilhelm
2. Transform feature was measured in. All data will be stored in a common space and if not possible that data will be flagged indicating not in the common space.	Resolved	Bob Wilhelm
3. Actual transform versus nominal transform. Need to create a location to store PCS transforms for later usage. Also need to create a link between these PCS and the features and tolerances that were measured/analyzed.	Resolved	Bob Wilhelm
4. "Measured Tolerance" should be called 'Tolerance Actual Value". Labels, Tolerance Actual, Tolerance Nominal, Feature Actual, Feature Nominal.	Resolved	Bob Wilhelm
5. Measurement Uncertainty. How should we handle this information?	Open	
6. Add cad identifiers for features. Add an optional attribute for the CAD identifier at the feature level with a 0 or more.	Resolved	Bob Wilhelm

7. Names of the cad models that are used for the measurement. Change "component_info" to read "cad_info".	Resolved	Bob Wilhelm
8. The associated transform for each cad model. This is more of an application issue and will not be addressed here.	No Action	
9. Surface comp'ed points. Support a variety of measurement data (ball center, effective radius). Last consensus is comp'ed data, ijk (surface normal), ball effective radius with Flag for comp'ed or not with the default value being comp'ed.	Resolved	Bob Wilhelm
10. Normal vector for measurement points. Add optional ijk to measured_point record.	Resolved	Bob Wilhelm
11. Need to add a scanning data structure. Will investigate the current DMIS Scanning specification to base this on.	Open	John Woottan
12. Sequence of events for when a feature is constructed (which points were used) Sequence of measurements and evaluations. Add optional SEQUENCE ID to feature, tolerance actual, and point_data. Strongly suggest that it is an integer in ascending order.	Resolved	Bob Wilhelm
13. Need a Vision based point measurement specialist to review algorithms. Photogrammetry, vision based CMM systems, laser trackers, laser scanners.	Open	Bob Waite and committee
14. Support of legacy files for getting the data into common system. The consensus is that each feature would have an optional flag that says that the feature coordinates are not in the common space. See item #2.	Resolved	
15. For the header use the DMIS defined terms (QIS), plus user defined types.	Resolved	Bob Wilhelm

16. Need to add QIS at the feature level.	Resolved	Bob Wilhelm
17. Remove Tolerance as option for TX-RZ on features.	Resolved	Bob Wilhelm
18. Analysis modes use the GEOALG from DMIS 4.0.	Resolved	Bob Wilhelm
19. Need to support the REPORT DMIS statement at the feature, tolerance and global levels.	Resolved	Bob Wilhelm
20. Axis extrapolation needs to move from a tolerance mode to a feature.	Resolved	Bob Wilhelm
21. Does a poly line accommodate inner and outer? Does it need to be closed or implied closed? Primarily a documentation issue.	Open	Joe Schafer
22. How does XML handle entities with the same ID? Suggest way to accommodate if allowed. Look at TR constructed method.	Open	Joe Schafer
23. Need to accommodate F() and FA() for feature constructs.	Resolved	Bob Wilhelm
24. Need to add NOMINAL attribute to *delta* type tolerances.	Resolved	Bob Wilhelm
25. Need to add relative to F(), FA() or Datum for the *between* type tolerances.	Resolved	Bob Wilhelm
26. Need to add F(), FA() for DRF specification.	Resolved	Bob Wilhelm
27. CORTOL will be added with the current PCS as an attribute.	Resolved	Joe Schafer
28. Need to add polar/cart at the measured tolerance and feature.	Resolved	Bob Wilhelm
29. Need to investigate how to best handle missing data for attributes.	Open	Bob Wilhelm and Joe Schafer
30. Need to investigate how to handle “deviation” type measurement.	Open	Joe Schafer
31. Need to map cone definition to better map to DMIS definition.	Resolved	Bob Wilhelm
32. Need orientation vector on spheres. Also map definition requirements to AP219.	Resolved	Bob Wilhelm
33. Need to document definition for all attributes in DTDs.	Resolved	Joe Schafer
34. Need to update feature, contructs and tolerance tables.	Open	Clay Tornquist

		and Ted Vorburger
35. Send out DTD V1.04 to entire group.	Closed	Joe Schafer

Analysis Methods

36. Analysis Methods:
    a. Circles, cylinders, spheres, arcs, ellipse:
        i. Maximum inscribed
        ii. Minimum circumscribed
        iii. Least Squares
    b. Planes, Lines
        i. Least Squares
        ii. Chebychev for the boundary (outer)
        iii. Translate Gausian to outer point
    c. Cones:
        i. Least Squares
    d. Slots (all)
        i. Least Squares
    e. Point:
        i. Least Squares
    f. General Curve:
        i. Least Squares
    g. General Surface:
        i. Least Squares
    h. Torus:
        i. Least Squares

Filtering:
    Smoothing:
        Undulations per revolution
        Lamda C
    Flyer Elimination:
        Sigma limits
        Chordal reduction